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**PRELIMINARY ASSESSMENT/  
VISUAL SITE INSPECTION**

**FLINT INK CORPORATION  
BROADVIEW, ILLINOIS  
ILD 006 537 245**

**FINAL REPORT RECEIVED**  
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**Prepared for**

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## 1.0 INTRODUCTION

PRC Environmental Management, Inc. (PRC), received Work Assignment No. R05032 from the U.S. Environmental Protection Agency (EPA) under Contract No. 68-W9-0006 (TES 9) to conduct preliminary assessments (PA) and visual site inspections (VSI) of hazardous waste treatment and storage facilities in Region 5.

As part of the EPA Region 5 Environmental Priorities Initiative, the RCRA and CERCLA programs are working together to identify and address RCRA facilities that have a high priority for corrective action using applicable RCRA and CERCLA authorities. The PA/VSI is the first step in the process of prioritizing facilities for corrective action. Through the PA/VSI process, enough information is obtained to characterize a facility's actual or potential releases to the environment from solid waste management units (SWMU) and areas of concern (AOC).

A SWMU is defined as any discernible unit at a RCRA facility in which solid wastes have been placed and from which hazardous constituents might migrate, regardless of whether the unit was intended to manage solid or hazardous waste.

The SWMU definition includes the following:

- RCRA-regulated units, such as container storage areas, tanks, surface impoundments, waste piles, land treatment units, landfills, incinerators, and underground injection wells
- Closed and abandoned units
- Recycling units, wastewater treatment units, and other units that EPA has usually exempted from standards applicable to hazardous waste management units
- Areas contaminated by routine and systematic releases of wastes or hazardous constituents. Such areas might include a wood preservative drippage area, a loading or unloading area, or an area where solvent used to wash large parts has continually dripped onto soils.

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An AOC is defined as any area where a release of hazardous waste or constituents to the environment has occurred or is suspected to have occurred on a nonroutine and nonsystematic basis. This includes any area where a strong possibility exists that such a release might occur in the future.

The purpose of the PA is as follows:

- Identify SWMUs and AOCs at the facility
- Obtain information on the operational history of the facility
- Obtain information on releases from any units at the facility
- Identify data gaps and other informational needs to be filled during the VSI

The PA generally includes review of all relevant documents and files located at state offices and at the EPA Region 5 office in Chicago.

The purpose of the VSI is as follows:

- Identify SWMUs and AOCs not discovered during the PA
- Identify releases not discovered during the PA
- Provide a specific description of the environmental setting
- Provide information on release pathways and the potential for releases to each medium
- Confirm information obtained during the PA regarding operations, SWMUs, AOCs, and releases

The VSI includes interviewing appropriate facility staff; inspecting the entire facility to identify all SWMUs and AOCs; photographing all visible SWMUs; identifying evidence of releases; making a preliminary selection of potential sampling parameters and locations, if needed; and obtaining additional information necessary to complete the PA/VSI report.

This report documents the results of a PA/VSI of the Flint Ink Corporation (Flint) facility (EPA Identification No. ILD 006 537 245) in Broadview, Cook County, Illinois. The PA was completed

on December 13, 1993. PRC gathered and reviewed information from the Illinois Environmental Protection Agency (IEPA), U.S. Department of Commerce (DOC), U.S. Department of Agriculture (USDA), U.S. Geological Survey (USGS), U.S. Department of the Interior (DOI), the Federal Emergency Management Agency (FEMA), Illinois State Water Survey (ISWS), National Oceanic and Atmospheric Administration (NOAA), and from EPA Region 5 RCRA files. The VSI was conducted on December 15, 1993. It included interviews with facility representatives and a walk-through inspection of the facility. PRC identified nine SWMUs and two AOCs at the facility.

The VSI is summarized and 13 of 16 photographs taken are included in Appendix A. The photographs were renumbered and do not match the numbers in the field notes. Field notes from the VSI are included in Appendix B.



## **2.0 FACILITY DESCRIPTION**

This section describes the facility's location, past and present operations, waste generating processes and waste management practices, history of documented releases, regulatory history, environmental setting, and receptors.

### **2.1 FACILITY LOCATION**

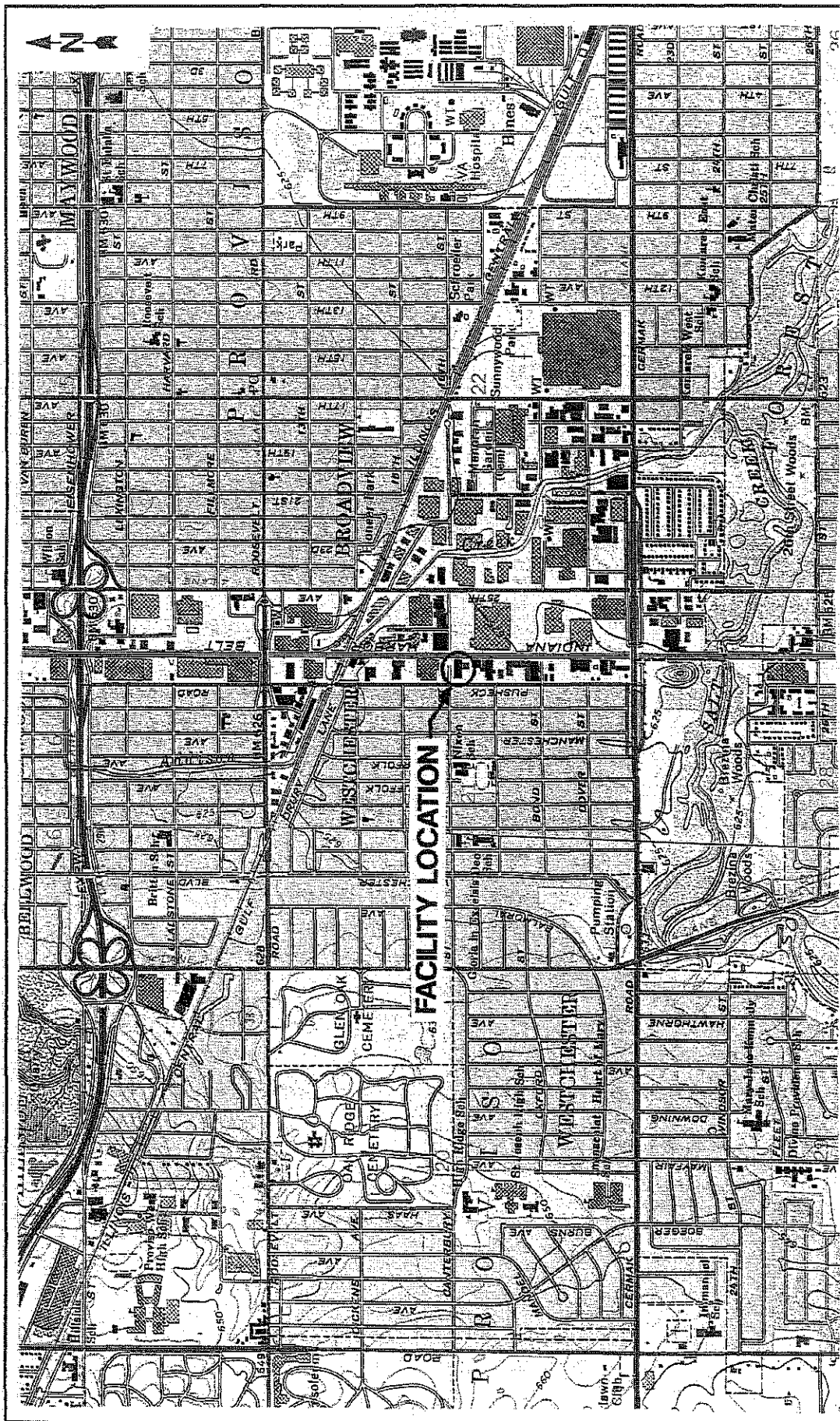
The Flint facility is located at 2601 Gardner Road, Broadview, Cook County, Illinois (latitude 41°51'26" N and longitude 87°52'01"W ), as shown in Figure 1. The facility occupies about 1 acre located in an industrial park in a mixed use area of Broadview.

The Flint facility is bordered on the north by Templeton Kenly, a hydraulic jack manufacturer. The facility is bordered on the east by several industries; on the south by Elam Mills, a flour processing facility; and on the west by residences.

### **2.2 FACILITY OPERATIONS**

The Flint facility was constructed in 1953 as one of the first facilities in the industrial park. Prior to 1953, the area was undeveloped and may have been farmed. The facility is a family-owned corporation with headquarters in Redford, Michigan. The facility has expanded three times during its history. In 1965, the facility expanded its manufacturing areas. In 1971, the facility expanded its indoor tank farms. And in 1974, the facility expanded its general office area. Throughout its history, the facility has upgraded its aboveground storage tanks (AST) and underground storage tanks (UST) by adding additional security features to the tanks and by removing and replacing tanks with new ones.

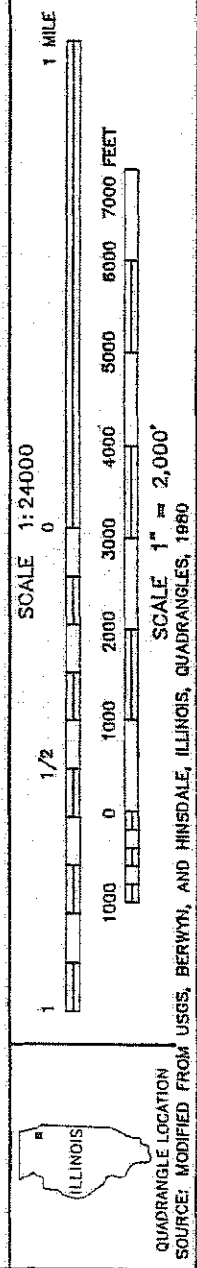
The facility has manufactured ink for a variety of industries, including newspapers and retail catalog publishers. Currently, the facility manufactures about 3 million pounds of ink annually. However, prior to 1991, the facility regularly manufactured more than 12 million pounds of ink annually. The decrease in production was due to a major client phasing out a catalog sector. The facility



FLINT INK CORPORATION  
BROADVIEW, ILLINOIS

**FIGURE 1**  
FACILITY LOCATION

**PRE** ENVIRONMENTAL MANAGEMENT, INC.



manufactures ink by combining pigments, resins, and a dispersion material. The ink is then modified according to formula specifications with oil, wax, or plastic. The ink is mixed to ensure uniformity and to remove air bubbles. The ink is then sampled for quality assurance/quality control, is filtered, and is canned for shipment off site. The facility manufactures both solvent-based ink and water-based alkyd ink. The facility also distributes, but does not manufacture, blanks, a rubber-fabricated material that absorbs ink and repels water.

The facility currently has three new 15,000-gallon raw material USTs, and 23 raw material ASTs. The USTs are located outdoors in the area of the Former Southwest UST Release Area (AOC 2). The USTs involved in the past releases were removed and replaced with the present USTs. The ASTs are located indoors, 16 of which are inside a tank farm. The facility operates three dust collectors and is in the process of installing groundwater Pump and Treat and Soil Vapor Extraction (PT and SVE) Systems (SWMU 9). The dust collectors are part of the dry ingredient process and delivery operations and are not SWMUs. The PT and SVE Systems will treat contamination from the Former Southwest UST Release Area (AOC 2). The facility buildings have about 45,000 square feet (ft<sup>2</sup>) of floor space. The facility includes three truck docks along its north side, one truck dock along its southwest corner, and a rail spur along its east side. The facility has not used its rail spur since 1991. The property is fenced on its east, south, and west sides. The north side is an open abandoned road that runs along the facility building and truck docks. The facility employs 45 people operating two shifts 5 days per week.

The facility generates both hazardous and nonhazardous wastes during its operations. Waste generating processes and the facility's waste management practices are detailed below in Section 2.3.

## **2.3 WASTE GENERATION AND MANAGEMENT**

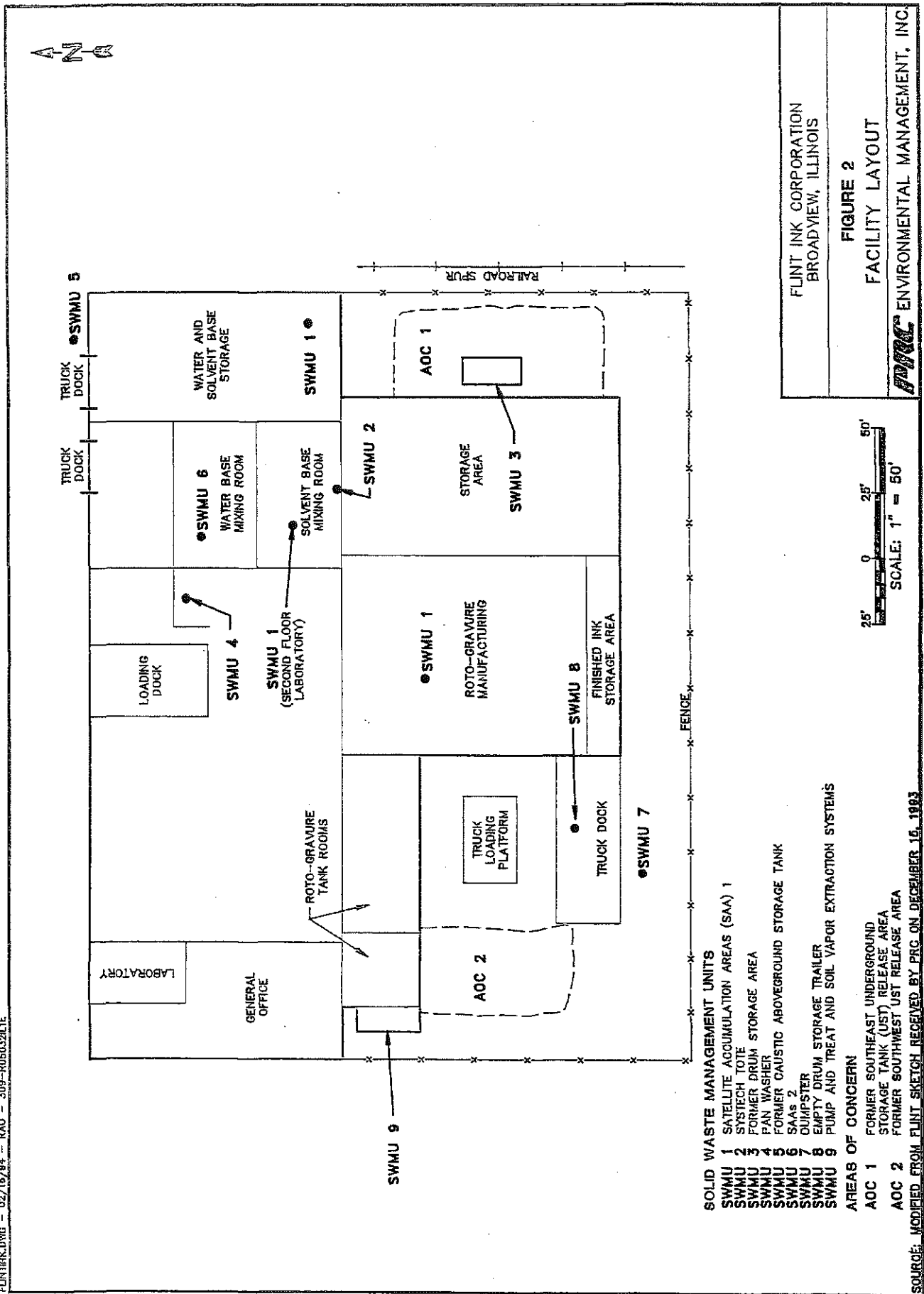
This section describes waste generation and management at the Flint facility. The facility's SWMUs are identified in Table 1. The facility layout, including SWMUs and AOCs, is shown in Figure 2. The facility's waste streams are summarized in Table 2.

**TABLE 1**  
**SOLID WASTE MANAGEMENT UNITS**

<u>SWMU Number</u>	<u>SWMU Name</u>	<u>RCRA Hazardous Waste Management Unit<sup>a</sup></u>	<u>Status</u>
1	Satellite Accumulation Areas (SAA) 1	No	Active; hazardous waste accumulation
2	Systech Tote	No	Active; less than 90-day hazardous waste storage
3	Former Drum Storage Area (DSA)	Yes	Inactive; RCRA closure approved by IEPA in 1985
4	Pan Washer	No	Active; hazardous waste accumulation
5	Former Caustic AST	Yes	RCRA closure approved by IEPA in 1985; moved indoors for raw material storage
6	SAAAs 2	No	Active; nonhazardous waste storage
7	Dumpster	No	Active; nonhazardous waste storage
8	Empty Drum Storage Trailer	No	Active; nonhazardous waste storage
9	PT and SVE Systems	No	Active; hazardous waste treatment process

Note:

<sup>a</sup> A RCRA hazardous waste management unit is one that currently requires or formerly required submittal of a RCRA Part A or Part B permit application.



**TABLE 2**  
**SOLID WASTES**

Waste/EPA Waste Code <sup>a,b</sup>	Source	Solid Waste Management Unit
Waste ink and solvent (D001, D018, F002, F003, and F005)	Scraping up ink spills, collecting line rinse, cleaning mixing equipment, off-specification errors, contaminated batches of ink, not adequately mixed ingredients, and QA laboratory equipment cleaning	1, 2, and 3
Caustic sludge (D002, D005, D007, D008, K086, and P030)	Cleaning mixing totes	4 and 5
Spent rags (Unknown)	Manual operations	6
Spent paper cups (Unknown)	QA laboratory operations	1, 7
Spent steel shot (NA)	Maintenance of ball mills	7
Spent cartridges and roller filters (NA)	Ink filtering operations	1, 7
Empty drums (NA)	Raw material use	8
Wastewater (U220)	PT System operations	9
Contaminated soil (U220)	SVE System operations	9

Notes:

<sup>a</sup> Not applicable (NA) designates nonhazardous waste.

<sup>b</sup> "Unknown" indicates that the waste was generated at the facility but that the waste code that applies to the waste has not been determined.

The Flint facility currently operates twelve waste generating processes. The current processes and the wastes that they generate are described below. Hazardous waste generating processes are described before nonhazardous waste generating processes.

- Scraping up ink spills generates waste ink and solvent (D001, D018, F002, F003, and F005).
- Collecting line rinse generates waste ink and solvent (D001, D018, F002, F003, and F005).
- Cleaning mixing equipment between batches of ink generates waste ink and solvent (D001, D018, F002, F003, and F005).
- Off-specification errors made in weighing out batches of ingredients, contaminated batches of ink, and ingredients not being adequately dispersed and milled result in waste ink and solvent (D001, D018, F002, F003, and F005).
- Cleaning glass bottles and filter screens in the QA laboratory with solvent generates waste ink and solvent (D001, D018, F002, F003, and F005).
- Cleaning mixing totes at the pan washer generates caustic sludge (D002, D005, D007, D008, K086, and P030).
- Manual operations including changing mixing totes and filters, weighing out ingredients, filling product cans, and general maintenance activities generate spent rags.
- Laboratory operations for sampling and testing QA samples of ink generate spent paper cups.
- The use of cold-rolled steel grinding shot to disperse pigment during the ball milling operations generates nonhazardous spent steel shot.
- Filtering ink into product containers generates nonhazardous spent cartridge and roll-type filters.
- The facility's use of raw materials that it receives in 55-gallon drums and 300-gallon tote bins generates nonhazardous empty drums and tote bins.
- Facility releases have generated contaminated groundwater (U220) and soil (U220).

The facility generates waste ink and solvent (D001, D018, F002, F003, and F005) during five primary solvent-based ink manufacturing operations. The facility eventually uses one Systech Tote (SWMU 2) to accumulate all its waste ink and solvent. First, small ink spills occur during product canning

operations. The ink dries on the floor, is scraped off, and is accumulated in 55-gallon drums at SAA 1 (SWMU 1). The waste in full 55-gallon drums is adjusted for solubility and is emptied into the Systech Tote (SWMU 2) where it is stored for less than 90-day. Monthly, the Systech Tote (SWMU 2) is transported off site by Van, Waters, and Rogers (VWR) of Schaumburg, Illinois (ILD 000 819 938) for treatment and disposal through Systech Corporation in Greencastle, Indiana (IND 006 419 212). VWR replaces the full tote with an empty tote. From 1980 to 1985, the facility stored full 55-gallon drums of waste ink and solvent at the Former DSA (SWMU 3) before shipping the waste off site. Facility records did not indicate how the waste was managed before 1980.

The second operation that generates waste ink and solvent (D001, D018, F002, F003, and F005) is a process that consists of rinsing the lines used to transfer the product ink. The lines are rinsed to keep product ink from drying inside the lines. The line rinse, which consists of waste ink and solvent, is accumulated in 55-gallon drums at SAAs 1 (SWMU 1). The waste in full 55-gallon drums is adjusted for solubility and is emptied into the Systech Tote (SWMU 2) where it is stored for less than 90-days.

The third process that generates waste ink and solvent (D001, D018, F002, F003, and F005) is the maintenance of small batch mixing equipment and the ball mill. Blades, shafts, and other stationary parts are wiped down with solvent between batches, generating waste ink and solvent. This waste ink and solvent is accumulated in 55-gallon drums in SAAs 1 (SWMU 1). This waste is either reworked into future batches of ink or is transferred to the Systech Tote (SWMU 2) where it is stored for less than 90-days.

The fourth process that generates waste ink and solvent (D001, D018, F002, F003, and F005) are production operations that result in off-specification errors, contaminated batches, and inadequately dispersed and milled batches of ink. Waste ink and solvent generated from these process errors is transported directly to the Systech Tote (SWMU 2) where it is stored for less than 90-days.

The last process that generates waste ink and solvent (D001, D018, F002, F003, and F005) is maintenance of equipment in the QA laboratory. The facility cleans glass bottles and filter screens with solvent in a parts-washer sink. Waste ink and solvent collect in 5-gallon pails beneath the sink at SAAs 1 (SWMU 1). Full 5-gallon pails are emptied into the System Tote (SWMU 2) where the waste is stored for less than 90-days.



The mixing totes used to manufacture water-based alkyd inks are mobile and the facility wheels them to the Pan Washer (SWMU 4) for cleaning between batches of ink. The totes are placed inside the Pan Washer which operates like a steam-powered dishwasher. The Pan Washer cleaner consists of about 95 percent of a low pH stripper containing sodium hydroxide. The cleaner and ink residuals condense in the Pan Washer and settle to the bottom of the Pan Washer holding tank. Solids continue to settle to the bottom of the Pan Washer, generating a caustic sludge (D002, D005, D007, D008, K086, and P030). The condensed cleaner is revaporized and recirculated to clean the next mixing tote. About every 9 months, the Pan Washer holding tank (part of SWMU 4) is cleaned out. The caustic sludge is emptied into totes and wheeled to the dock where Mr. Frank, Inc., of South Holland, Illinois (ILD 984 775 049) pumps the sludge into a tanker truck and transports it to Beaver Oil Company of Hodgkins, Illinois (ILD 064 418 353) for off-site treatment and disposal. From 1980 to 1985, the caustic sludge was stored for greater than 90 days in the Former Caustic AST (SWMU 5) before off-site disposal. From 1985 to 1992, the facility did not manufacture the water-based alkyd inks that generated this waste.

Manual operations at the facility include changing small mixing totes, filters, weighing out dry and liquid raw materials, canning product ink, and general maintenance activities. Employees use rags during each of these operations to absorb the ink and raw materials that they come into contact with. Spent rags are collected in closed-topped 5-gallon pails at SAAs 2 (SWMU 6). This waste has not been analyzed for hazardous constituents. Coin Textile of Joliet, Illinois, launders the spent rags and supplies new rags to the facility weekly. The facility generates between 200 and 400 spent rags per week.

The QA laboratory generates spent paper cups containing ink residue from transferring and testing QA ink samples during laboratory operations. Spent paper cups accumulate in 5-gallon pails in the laboratory at SAAs 1 (SWMU 1). This waste has not been analyzed for hazardous constituents. Full pails are emptied into the Dumpster (SWMU 7) for disposal off site with other general refuse. The facility does not keep track of the number or amount of spent paper cups that it generates.

The facility uses cold-rolled steel grinding shot as the milling media in the ball mills to disperse pigment and blend ingredients. Over time, the grinding shot becomes worn and must be replaced. Annually, the facility cleans waste ink and solvent from the spent grinding shot and discards the

The facility mixes liquid and dry ingredients to manufacture inks. Liquid ingredients are pumped by meter into the mixing totes and ball mills through pipes and hose lines. Dry ingredients are manually weighed out and poured through funnels into the mixing totes and ball mills. The force of gravity delivers most of the dry ingredients to the mixers, but some amount becomes air-borne. The air-borne ingredients are captured by one of three baghouse filters and are accumulated in 55-gallon drums. The drums of captured dry ingredients are returned to the measuring area to be added to the next batch of ink. Dry ingredients captured by the baghouses are never discarded.

## **2.4 HISTORY OF DOCUMENTED RELEASES**

This section discusses the history of documented releases to groundwater, surface water, air, and on-site soils at the facility. The Flint facility has had four releases during its operating history.

In April 1976, a release occurred after a transfer of lactol spirits when a valve was left open because of operator error (IEPA 1976a). About 1,600 gallons of lactol spirits and toluene overflowed from the USTs onto facility grounds, Gardner Street, and into the storm sewer. The Broadview and Westchester fire departments responded by evacuating several area residents, spraying the product with a fire foam suppressant, flushing the sewer with water, and monitoring the vapor levels at downstream sewers.

The facility installed limit controls on the two USTs 3 days after the spill occurred (IEPA 1976b). The State of Illinois issued a formal complaint against the facility for allowing an air pollution release. No soil or water samples were analyzed during the cleanup. No further documentation has been identified regarding the release. The location of the UST involved in this release could not be identified through file reviews or from interviews with facility representatives. However, the UST would have to have been either one of the five former USTs, located on southeast side of the facility (described in Section 4.0, AOC 1), or one of the two former USTs, located on southwest side of the facility (described in AOC 2).

The second release occurred in September 1987, during the filling of a toluene UST (IEPA 1987). About 880 gallons of toluene spilled onto a gravel area of the facility when the tank was overfilled. The facility used temporary dikes to block the storm drains, although the IEPA incident report

(No. 8771606) indicated that some toluene entered the storm drains. The location of the UST involved in this release has not been identified through file reviews or from interviews with facility representatives. However, the UST would have to have been either one of the five former USTs described in Section 4.0, AOC 1 or one of the two former USTs described in AOC 2.

The third release was discovered in November 1989 during tank removal activities of five USTs (IEPA 1989c). One 15,000-gallon UST and four 10,000-gallon USTs located on the southeast side of the property were being removed when removal contractors determined that a release to the surrounding soils had occurred (Heritage Remediation/Engineering, Inc. [Heritage 1989]). All of the USTs were corroded and pitted, and one UST had a 1.5-inch diameter hole. Results from two composite soil samples from the UST excavation indicated that bromoform, 2-chloroethylvinylether, chlorobenzene, chloroform, 1,2-dichloroethane (or 2-butanone), trichloroethene, 4-methyl-2-pentanone, and carbon tetrachloride were present above their respective detection limits. Of these, bromoform, 2-chloroethylvinylether, and chlorobenzene were detected at about 100 milligrams per kilogram (mg/kg) (Heritage 1990a). The facility contracted Heritage to conduct additional testing. Heritage determined that the excavation fill materials were the primary media affected by the release with analytical results on the fill material showing the highest contamination to be toluene at 6,500 micrograms per kilogram ( $\mu\text{g/kg}$ ) of toluene. Two other soil samples from the tank excavation detected toluene at 55  $\mu\text{g/kg}$  and 130  $\mu\text{g/kg}$ . Heritage also indicated that no VOCs analyzed for were detected above detection limits in the groundwater samples taken. No further action was taken by the facility. In May 1990, IEPA reviewed the facility's reports on the release and sent the facility a letter indicating that no additional remediation was required for the Former Southeast UST Release Area (AOC 1) (IEPA 1990). This release is further discussed in Section 4.0 as AOC 1.

The fourth release was discovered in February 1990, during the removal of two additional USTs that were located on the southwest side of the facility property (AOC 2) (Heritage 1990b). Facility contractors identified contaminated fill soils and free product during the excavations. The facility contracted with Heritage to investigate the extent of the release. Heritage determined that the upper perched water table and site soils ranging from 9 to 15 feet below ground surface (bgs) are contaminated by toluene and xylenes. The highest analytical result was identified as 680,000  $\mu\text{g/kg}$  of toluene at about 12 feet bgs in the water table. However, the investigation also determined that the contaminant plume was irregularly shaped both horizontally and vertically. The facility

representatives indicated that the facility is preparing an investigation report that will include additional exploration of the contaminant plume and a work plan for implementing its PT and SVE Systems (SWMU 9) to remediate the contamination from this release. This release is further discussed in Section 4.0 as AOC 2.

## **2.5 REGULATORY HISTORY**

Flint submitted a Notification of Hazardous Waste Activity form to EPA on August 15, 1980 (Flint 1980a). On November 18, 1980, the facility submitted a RCRA Part A permit application and later a supplement to the application (Flint 1980b and 1981). The application listed 4,400 gallons of container storage (SO1) for the Former Drum Storage Area (SWMU 3) and 5,000 gallons of tank storage (SO2) for the Former Caustic AST (SWMU 5). The application listed and then crossed off treatment codes. The application listed the annual generation rates and waste codes as 194,400 pounds of D002, D005, K086, and P030 waste; and 21,600 pounds of D001 and U220 waste. The application identified Flint as a treatment, storage, and disposal (TSD) facility.

In March 1982, EPA notified Flint that the facility's application had met the requirements for interim status (EPA 1982). In December 1984, Flint notified IEPA of the facility's intent to withdraw its Part A permit application because it would no longer store waste for greater than 90 days and would no longer neutralize its hazardous wastes (Flint 1984). Facility representatives indicated that it never neutralized its hazardous wastes.

In March 1985, the facility submitted a closure plan to IEPA for the two RCRA units (SWMUs 3 and 5) (Flint 1985). In June 1985, Ecology and Environment, Inc. (E&E), submitted a certification of closure to IEPA for the Flint facility (E&E 1985). In August 1985, IEPA notified the facility that closure of SWMUs 3 and 5 was approved in accordance with the closure plan (IEPA 1985). The facility is currently operating as a large-quantity generator storing hazardous waste for less than 90 days.

IEPA conducted one RCRA inspection of the facility (IEPA 1982). IEPA indicated that the facility was in compliance with applicable regulations.

The facility holds air permits for three particulate baghouses and has applied for air permits for its PT and SVE Systems (SWMU 9). In 1976, the State of Illinois filed a formal complaint against the facility for the UST release of toluene that caused associated air pollution and the temporary evacuation of several area residents (State of Illinois 1976). The release is further described in Section 2.4. In 1989, IEPA sent the facility a compliance inquiry letter for continuing to operate a particulate baghouse without renewing its permit (IEPA 1989a). The facility responded by submitting a renewal application (IEPA 1989b). The renewal application was denied although the IEPA file does not indicate the basis for the denial. An internal IEPA memorandum referred the facility for an inspection. No follow-up information regarding the memorandum was found in IEPA files.

The facility holds permit number IL0070041 for a National Pollutant Discharge Elimination System (NPDES) permit for its pump and treat system, part of SWMU 9. Under the permit the facility will discharge wastewater to the storm sewer which drains into Addison Creek. The facility does not discharge to the city sewer system and does not operate under a Publicly-Owned Treatment Works (POTW) permit.

The facility currently has three new 15,000-gallon USTs. The USTs are used for raw material storage. One of the three holds toluene, the other two are currently empty because of a work slowdown. The three tanks were installed in 1992. The USTs are equipped with cathodic protection and secondary containment.

The facility has removed 10 USTs and one AST. Seven of the 10 USTs are associated with releases described in Sections 2.4 and 4.0. The other three USTs involved a total containment system that the facility installed on the southwest side in August 1992. Upon installation, while the USTs were empty, one of the three USTs began to take in water. The entire system was removed and sent back to the vendor for reconditioning and the addition of cathodic protection. The tanks were then reinstalled and include the only USTs that the facility currently operates. The AST was closed and moved indoors in 1985 during facility RCRA closure activities. The AST is currently used for raw material storage.

The facility has had four releases to environmental media. These are described in Sections 2.4 and 4.0. All the releases were associated with the USTs. Soil and groundwater contamination remain

from the releases, and the facility is currently working with IEPA to remediate the contamination from AOC 2.

## **2.6 ENVIRONMENTAL SETTING**

This section describes the climate, flood plain and surface water, geology and soils, and groundwater in the vicinity of the facility.

### **2.6.1 Climate**

The climate in Cook County is temperate, humid, and continental (USDA 1979). The average daily temperature is 49 °F. The lowest average daily temperature is 13.3 °F and occurs in January. The highest average daily temperature is 82.4 °F and occurs in July.

The total annual average precipitation for the county is 33.4 inches (USDA 1979). The mean annual lake evaporation for the area is about 29.75 inches (DOC 1968). The average 1-year, 24-hour maximum rainfall is about 2.4 inches (DOC 1963). The total annual average snowfall for the county is 38.3 inches (USDA 1979). The prevailing wind is from the west-southwest with the highest average wind speed of 12 miles per hour in April (NOAA 1990).

### **2.6.2 Flood Plain and Surface Water**

The facility is not located in a flood plain (FEMA 1981). Addison Creek, the nearest surface water body, is located about 3 blocks east of the facility (USGS 1963a and 1963b). Addison Creek is used for surface water drainage and is not considered a recreational surface water body (PRC 1994). Addison Creek flows in a northwest to southeast direction and discharges into Salt Creek about 1 mile southeast of the facility. Salt Creek discharges to the Des Plaines River about 3.25 miles southeast of the facility. Salt Creek and the Des Plaines River are the two main drainage paths in the area. Surface water runoff at the facility drains to storm sewers on the north, east, and west sides of the facility. The storm sewers discharge to Addison Creek.

Addison Creek, Salt Creek, and the Des Plaines River are each classified as riverine, lower perennial, open water/unknown bottom, permanently flooded wetland systems (DOI 1981a and 1981b). Addison Creek also is excavated. Other wetlands within 1 mile of the facility are associated with Salt Creek and the Des Plaines River. The nearest nonriverine wetland is a palustrine, forested, broad-leaved, temporarily flooded system about 0.75 mile southwest of the facility along Salt Creek. The system is about 5 to 10 acres in size.

### **2.6.3 Geology and Soils**

Much of Cook County is nearly level (USDA 1979). The facility and the surrounding industrial park are about 625 feet above mean sea level (USGS 1963a).

Well logs recorded during the facility's UST removals indicated that the underlying soils include brown and gray silty clay, down to about 9 feet bgs and that gray clayey silt with irregular sandy silt lenses occurred at depths of 9 to 12 feet bgs (Heritage 1990a). From 12 to 15 feet bgs, a black and gray sand and gravel layer exists and below 15 feet a gray clay exists. The thickness of the clay layer was not determined. The facility's additional investigations indicated irregular patterns of sand and clay layers from 10 to 20 feet bgs (Heritage 1990b).

Generally, the area is underlain by glacial drift of the Wedron formation to thicknesses up to 100 feet (ISGS 1976). Below the Wedron formation are the Silurian Age dolomite formations that range from 5 to 100 feet in thickness. Ordovician Age shale and dolomite formations lie below the Silurian Age formation and range in thickness from 0 to 800 feet.

### **2.6.4 Groundwater**

Groundwater at the facility is found at 7 to 8 feet bgs (Heritage 1990b). The closest groundwater well to the facility is about 1 block southeast and down slope of the facility (ISWS 1994). The well obtains groundwater from bedrock aquifers at 1,503 feet bgs and is used for industrial processes. Silurian and Ordovician Age formations provide the best sources of groundwater in the area, although the glacial drift also can provide groundwater.

The upper glacial aquifer flows southeast toward the Des Plaines River (USDA 1979). Deeper aquifers flow south and southwest into the Mississippi drainage basin.

## **2.7 RECEPTORS**

The facility occupies about 1 acre in a mixed-use area in Broadview, Illinois, which has a population of 9,623 (Rand McNally 1992). The Flint facility is bordered on the north and east by other industrial facilities; on the south by a flour processing facility; and on the west by residences.

The nearest school, Westchester Middle School, formerly Nixon Elementary School, is located 3 blocks west of the facility. The facility is surrounded by a chain-link fence on its east, south, and west sides, and the facility building is equipped with a fire and burglar alarm system.

The nearest surface water body, Addison Creek, is located 3 blocks east of the facility. Addison Creek flows southeast and discharges into Salt Creek about 1 mile southeast of the facility. Addison Creek and Salt Creek are classified as riverine wetland systems. The next nearest wetland system, the Des Plaines River, is about 2.25 miles east, and down slope from the facility.

The City of Broadview receives its drinking water from Lake Michigan. Groundwater use in the area is limited to industrial users. The closest industrial use of groundwater is 1 block southeast of the facility. Upper glacial aquifers flow southeast toward the Des Plaines River; however, deeper aquifers flow south and southwest to the Mississippi drainage basin. The Brookfield-Chicago Zoological Park is located about 2 miles southeast of the facility. No other sensitive environments are located within 2 miles of the facility.



### 3.0 SOLID WASTE MANAGEMENT UNITS

This section describes the nine SWMUs identified during the PA/VSI. The following information is presented for each SWMU: description of the unit, dates of operation, wastes managed, release controls, history of documented releases, and PRC's observations. Figure 2 shows the SWMU locations.

#### **SWMU 1**

#### **SAA's 1**

**Unit Description:**

The SAA's 1 are located indoors throughout the facility production areas. The unit consists of numerous concrete floor spaces that measure about 3 feet by 3 feet each. The unit is used to accumulate hazardous wastes in drums and spent dry filters and paper cups in pails and drums on the floor surface.

**Date of Startup:**

The unit began operating in 1953.

**Date of Closure:**

The unit is currently active.

**Wastes Managed:**

The unit manages waste ink and solvent (D001, D018, F002, F003, and F005) in 55-gallon drums, and nonhazardous spent dry filters and spent paper cups in open-topped 5-gallon pails and open-topped 55-gallon drums. Full drums of waste ink and solvent are transferred manually or using pumps to the Systech Tote (SWMU 2) prior to off-site disposal. Full pails and drums of nonhazardous spent dry filters and spent paper cups are transferred to the Dumpster (SWMU 7) prior to off-site disposal.

**Release Controls:**

The floor surface is made of concrete, and floor drains are plugged in all production areas.

**History of  
Documented Releases:**

No releases from this unit have been documented.

**Observations:** During the VSI, PRC observed no cracks in the floor surface. PRC observed minor stains at several locations (see Photographs No. 1 through 3). No pails or drums of spent filters were observed because the facility representative indicated that no filters were in the drying stage; filters were either in use in the filtering operation or had been put in the Dumpster (SWMU 7).

**SWMU 2**

**Systech Tote**

**Unit Description:** The Systech Tote is located indoors in an east-central area of the facility building. The unit consists of a closed-topped 330-gallon AST. The unit is made of carbon steel and is located on a 6-inch platform over a concrete floor surface.

**Date of Startup:** The unit began operation in 1993. Between 1985 and 1993, all waste ink and solvents were reworked into black ink. Prior to 1985, drums of waste ink and solvent were stored in the Former DSA (SWMU 3) prior to disposal off site.

**Date of Closure:** The unit is currently active.

**Wastes Managed:** The unit manages waste ink and solvent (D001, D018, F002, F003, and F005).

**Release Controls:** The unit is located on a concrete floor surface and has a closed top. No open floor drains are located in the area. VWR replaces the unit with a new tote monthly.

**History of Documented Releases:** No releases have been documented from this unit.

Observations:	During the VSI, PRC observed moderate stains on the floor surface surrounding the unit (see Photograph No. 4). No cracks, leaks, or other evidence of release were observed on the unit or surrounding floor surface.		
<table border="0" style="width: 100%;"> <tr> <td style="width: 30%; vertical-align: top;">SWMU 3</td> <td>Former DSA</td> </tr> </table>		SWMU 3	Former DSA
SWMU 3	Former DSA		
Unit Description:	The Former DSA was located outdoors on the southeast side of the facility building. The unit consisted of a concrete surface about 10 feet wide by 25 feet long. The unit was surrounded by additional concrete pads that were used to store raw materials. The unit was located above the Former Southeast UST Release Area (AOC 1).		
Date of Startup:	The unit operated from about 1980 to 1985. Facility representatives could not provide waste management history prior to 1980.		
Date of Closure:	The unit was closed and its closure was approved by IEPA in 1985.		
Wastes Managed:	The unit managed waste ink and solvent (D001, D018, F002, F003, and F005) in closed 55-gallon drums for greater than 90 days before off-site disposal.		
Release Controls:	The unit was a concrete surface. The nearest storm drain is located on the north border of an adjacent concrete surface. Surface water runoff drained to an adjacent rail spur along the east side of the unit.		
History of Documented Releases:	No releases from this unit have been documented. During closure of the unit, an HNu photoionizer was used to survey the unit and adjacent soils for hydrocarbon contamination. No contamination was detected. No soil samples were analyzed. The concrete surface was removed in 1989 during the removal of the five southeast-side USTs.		

**Observations:** During the VSI, PRC observed the area that formerly housed this unit. The area is currently not used for any facility operation and consists of a gravel and dirt surface (see Photograph No. 5). PRC observed no stains or other evidence of release. PRC noted a puddle along a central ditch from the day's rain.

**SWMU 4**

**Pan Washer**

**Unit Description:** The Pan Washer is located indoors in a north-central area in the facility building. The unit consists of a steel washer tank, a 1,800-gallon steel holding AST, and a steam coil pumping system. The unit vaporizes caustic cleaning fluid and sprays the mixing totes to clean them in a manner similar to that of an automatic steam-powered dishwasher. The spent ink and caustic cleaner drain down into the holding AST where the spent ink settles out into caustic sludge and where the caustic cleaner is recycled into the vapor spray.

**Date of Startup:** The unit began operation in 1993. From 1980 to 1985, caustic sludge cleaner was accumulated in the Former Caustic AST (SWMU 5). Prior to 1980, the facility representatives indicated that it is not known how caustic sludge was managed.

**Date of Closure:** The unit is currently active.

**Wastes Managed:** The unit manages caustic sludge and caustic cleaner (D002, D003, D007, D008, K086, and P030). When the caustic cleaner becomes spent by the caustic sludge, a transporter comes to pump out the sludge for off-site treatment and disposal.

**Release Controls:** The washer is located above the 1,800-gallon holding tank on a floor grill. The surrounding floor surface is concrete. Floor spills and

splashes drain into the holding tank. No open floor drains are located in the area.

**History of  
Documented Releases:**

No releases have been documented at this unit.

**Observations:**

During the VSI, PRC observed moderate staining on and around the unit. Much of the surrounding floor surface was obscured by used pails and drums that were set aside for cleaning (see Photograph No. 6).

**SWMU 5**

**Former Caustic AST**

**Unit Description:**

The Former Caustic AST was located outdoors on the northeast corner of the facility building. The unit consisted of a fenced-in 10-ft<sup>2</sup> concrete slab and a 5,000-gallon carbon steel AST. The closest storm drain was located about 15 feet northeast of the unit.

**Date of Startup:**

The unit began operation in about 1980. Facility representatives indicated that it is not known how caustic sludge was managed before 1980.

**Date of Closure:**

The unit was closed and the closure was approved by IEPA in 1985. The AST was moved indoors for raw material storage.

**Wastes Managed:**

The unit managed caustic sludge (D002, D003, D007, D008, K086, and P030) for greater than 90 days before off-site treatment and disposal.

**Release Controls:**

The unit contained a concrete ground surface and was surrounded by a locked chain-link fence topped with barbed wire.

History of Documented Releases:	No releases have been documented from this unit. During closure, soil testing identified no pH readings above background levels.
Observations:	During the VSI, PRC observed the area where the unit was formerly housed. The AST had been moved into the facility for use as a product AST, and a portion of the chain-link fence had been removed. The remaining concrete surface showed minor cracks and no sealed seams. PRC observed minor puddling from the day's rain and minor rust stains (see Photograph No. 7).
<b>SWMU 6</b>	<b>SAA's 2</b>
Unit Description:	The SAA's 2 are located indoors through the production areas. The units consist of close-topped 5-gallon pails on concrete floor surfaces.
Date of Startup:	The unit began operation in about 1953.
Date of Closure:	The unit is currently active.
Wastes Managed:	The unit manages spent rags used during cleaning and handling ink-contaminated equipment. Spent rags are transported off site for cleaning and are returned for reuse.
Release Controls:	The unit is located on concrete floors. All floor drains are plugged in the area. The 5-gallon pails have closed tops.
History of Documented Releases:	No releases have been documented from this unit.

Observations: During the VSI, PRC observed minor stains on the unit and surrounding floor surface. No cracks or other evidence of release was noticeable on the unit or surrounding surface (see Photograph No. 8).

**SWMU 7**

**Dumpster**

Unit Description: The Dumpster is located outdoors in a southwest area of the facility. The unit consists of a close-topped 20-cubic-yard (yd<sup>3</sup>) metal roll-off box and compactor on a concrete slab. The slab is surrounded by a drainage trench. The trench discharges to a sump that discharges to the storm sewer. The storm sewer eventually discharges to Addison Creek.

Date of Startup: The unit began operating in about 1980.

Date of Closure: The unit is currently active.

Wastes Managed: The unit manages nonhazardous spent grinding shot, nonhazardous spent dry filters, and spent paper cups before off-site disposal.

Release Controls: The unit is close-topped and located on a concrete slab. Runoff from the slab collects in a sump before being discharged to the storm sewer.

History of Documented Releases: No releases from this unit have been documented.

Observations: During the VSI, PRC observed minor stains on the concrete slab surrounding the dumpster (see Photograph No. 9).

**SWMU 8****Empty Drum Storage Trailer**

**Unit Description:** The Empty Drum Storage Trailer is located outdoors on the southwest side of the facility. The unit consists of a semi-truck trailer and dock. The dock and surrounding ground surface are made of concrete and asphalt. The concrete and asphalt surfaces drain to a sump that discharges to the storm sewer.

**Date of Startup:** The unit began operating in about 1953.

**Date of Closure:** The unit is currently active.

**Wastes Managed:** The unit manages nonhazardous empty drums before they are sent off site for reconditioning.

**Release Controls:** The unit is located on a concrete surface; however, the area drains to a sump that discharges to the storm sewer.

**History of Documented Releases:** No releases from this unit have been documented.

**Observations:** During the VSI, PRC observed moderate staining and minor cracks in the asphalt dock surface (see Photographs No. 10 and 11).

**SWMU 9****PT and SVE Systems**

**Unit Description:** The PT and SVE Systems are located indoors on the west side of the facility building. During the VSI, the unit consisted of four 55-gallon drums of activated carbon and a pumping system. The treated groundwater will be discharged to the storm system under a NPDES permit, and air emissions will be exhausted under an IEPA air permit. The PT system will treat an average of 2 gallons per minute which will vary based on seasonal groundwater flow rates. The treated soil



gas will be discharged to the air under an air permit. The SVE systems maximum blower capacity will be 16.6 inches of mercury (Hg) vacuum. The unit was not fully installed during the VSI.

Date of Startup:	The unit is expected to begin operating in 1994.
Date of Closure:	The unit has not yet begun operating.
Wastes Managed:	The unit will treat contaminated groundwater and soil (U220) from a 1989 toluene UST release.
Release Controls:	The unit is a corrective measure. The facility's NPDES permit requires monthly monitoring submittals to IEPA.
History of Documented Releases:	No releases from this unit have been documented.
Observations:	During the VSI, the unit was only partially installed. Four drums of activated carbon and hosing were stored near a pump room along the west side of the facility (see Photograph No. 12).

#### 4.0 AREAS OF CONCERN

PRC identified two AOCs during the PA/VSI. These AOCs are discussed below; their locations are shown in Figure 2.

##### AOC 1 Former Southeast UST Release Area

The Former Southeast UST Release Area is located outdoors along the southeast side of the facility. It is located beneath the Former DSA (SWMU 3). The Former DSA was closed in 1985, in accordance with an IEPA-approved closure plan. The plan, though, did not include soil sampling. The aboveground surface also functioned as a rail car bulk shipment unloading area. At least one release and possibly three releases have occurred in this area during the history of facility operations. The facility operated one 15,000-gallon UST and four 10,000-gallon USTs in this area for about 30 years. The USTs contained toluene, alcohol, isopropyl acetate, textile spirits, reclaimed toluene, and reclaimed solvents. In 1989, the facility removed the USTs and discovered soil contamination that appears to have been attributed to the toluene UST.

Two additional releases associated with tank overfills occurred in 1976 and 1987. Both the USTs and areas involved in the overfills were not documented at the time of the release. It is not known whether these spills occurred at the southwest-side USTs or the southeast-side USTs.

In 1989 and 1990, the facility conducted soil and groundwater testing. The highest analytical result detected toluene in the excavation fill materials at 6,500  $\mu\text{g}/\text{kg}$ . The highest analytical result in the surrounding soil was 130  $\mu\text{g}/\text{kg}$ . Groundwater was not affected above detection limits. The report recommended that the facility take no further action based on petroleum standards. The report also indicated that most of the area was paved and that the facility was planning to repave the surface above the former USTs. A paved surface would limit the chance of subsurface contamination migrating into the water table. In 1990, IEPA approved the UST closure. However,

during the VSI, PRC observed that the surface had not been repaved (see Photograph No. 5). The surface was uneven, and ponding was noticeable from the day's rain.

According to facility representatives, remediation of this area is not included in the work plan being submitted to IEPA. No contaminated soil was removed from this affected area. A storm sewer vent is located along the north edge of the area.

## **AOC 2      Former Southwest UST Release Area**

The Former Southwest UST Release Area is located outdoors on the southwest side of the facility. At least one release and possibly three releases have occurred in this area during the history of facility operations. Until 1990, two 25,000-gallon USTs containing toluene were operating in this area. They had operated for about 11 years. In 1990, the USTs were removed and soil and groundwater contamination including free product was discovered.

Two additional releases associated with tank overfills occurred in 1976 and 1987; however, which USTs and which areas were involved in the overfills were not documented at the time of the release. It is not known whether the USTs where the spill occurred were the southwest-side USTs or the southeast-side USTs.

The facility conducted soil and groundwater testing. The highest analytical result identified toluene about 12 ft bgs in the water table and subsurface soils at 680,000  $\mu\text{g/kg}$ . The facility began additional investigations to determine the vertical and horizontal extent of the contamination. The facility also is preparing a work plan for using the PT and SVE Systems (SWMU 9) to remediate the contamination. The facility expects to submitted the work plan and the investigation report to IEPA near the end of February 1994.

No contaminated soil has been removed from the affected area. The USTs were removed, and new USTs were installed in their place. The surface area is paved with

concrete and is equipped with a trench to channel runoff to the storm sewers (see Photograph No. 13).

9 PAGES REDACTED





## REFERENCES

- Ecology and Environment, Inc. (E&E). 1985. Transmittal Letter for Certification of Closure. From Michael Miller, PE. To Lawrence Eastep, IEPA. June 2.
- Federal Emergency Management Agency (FEMA). 1981. Flood Insurance Rate Map. Community-Panel Number 1700670001B. January 16.
- Flint Ink Corporation (Flint). 1980a. Notification of Hazardous Waste Activity. August 15.
- Flint. 1980b. RCRA Part A Permit Application. November 18.
- Flint. 1981. Supplement to RCRA Part A Permit Application. January 26.
- Flint. 1984. Request for Withdrawal of Part A Permit Application. From Sharon Maki, Environmental Affairs. To Rama Chaturvedi, IEPA. December 20.
- Flint. 1985. Transmittal Letter for Closure Plan. From Sharon Maki, Environmental Affairs. To Rama Chaturvedi, IEPA. March 15.
- Heritage Remediation/Engineering, Inc. (Heritage). 1989. Letter Report Describing Release Associated with Five USTs. December 14.
- Heritage. 1990a. "Preliminary Subsurface Investigation Report for Flint, Broadview, Illinois." February 13.
- Heritage. 1990b. "Report on the Subsurface Soil Investigation at USTs 6 and 7 for Flint, Broadview, Illinois." April 18.
- Illinois Environmental Protection Agency (IEPA). 1976a. Spill Report Memorandum. From Karl Franson, Division of Air Pollution Control (DAPC). To Jack Coblenz, Manager Emergency Response (MER). April 16.
- IEPA. 1976b. Follow-up Spill Report. From Brad Lewis, DAPC. To Jack Coblenz, MER. April 21.
- IEPA. 1982. Compliance Evaluation Inspection Letter. From Kenneth Bechely, Northern Region Manager, Field Operations Section. To Robert Farej, Flint. January 26.
- IEPA. 1985. Closure Approval Letter. From Lawrence Eastep. To Robert Farej, Flint. August 15.
- IEPA. 1987. Emergency Response Unit Spill Log Number 871606. September 29.
- IEPA. 1989a. Compliance Inquiry Letter for Nonrenewal of Air Permit. From Miles Zamco, DAPC. To B.C. Nygard, Flint. February 8.



- IEPA. 1989b. Internal Memorandum Regarding Nonrenewal of Air Permit. From Miles Zamco. To Bob Sharpe, IEPA. June 27.
- IEPA. 1989c. Emergency Response Unit Spill Log Number 892323 Involving Southeast-side Underground Storage Tanks (UST). November 14.
- IEPA. 1990. Response to LUST Reports. From Kenneth Page to Wes Mochle, Flint Headquarters. May 9.
- Illinois State Geological Survey. 1976. "Geology for Planning in Northeastern Illinois. I. Geologic Framework, Project Goals, and Procedures." Bagner et al. May 17.
- Illinois State Water Survey. 1994. Transmittal Letter and Data Printout. From Brenda Hughes. To Celeste Brancel. February 7.
- National Oceanic and Atmospheric Administration (NOAA). 1990. Local Climatological Data for Chicago O'Hare International Airport, Illinois.
- PRC Environmental Management, Inc.(PRC). 1994. Telephone Log Regarding Receptor Information. From Celeste Brancel. To Bob Macaluso, Broadview Public Works. February 9.
- Rand McNally. 1992. *Business Traveler's Road Guide to the United States*.
- State of Illinois. 1976. Formal Complaint Notice. From William Scott, Attorney General. To Flint Ink Corporation. April 22.
- U.S. Department of Agriculture (USDA). 1979. *Soil Survey of DuPage and Parts of Cook County, Illinois. Soil Conservation Service*. May.
- U.S. Department of Commerce (DOC). 1963. *Rainfall Frequency Atlas of the United States*.
- DOC. 1968. *Climatic Atlas of the United States*.
- U.S. Department of Interior (DOI). 1981a. National Wetland Inventory Map, Berwyn, Illinois, Quadrangle. November.
- DOI. 1981b. National Wetland Inventory Map, Hinsdale, Illinois, Quadrangle. November.
- U.S. Environmental Protection Agency (EPA). 1982. Interim Status Acknowledgement. From Karl Klepitsch. To Sharon Harnack, Flint Headquarters. March 22.
- U.S. Geological Survey (USGS). 1963a. 7.5-Minute Topographic Map, Berwyn, Illinois, Quadrangle. Photorevised 1972 and 1980.
- USGS. 1963b. 7.5-Minute Topographic Map, Hinsdale, Illinois, Quadrangle. Photorevised 1972 and 1980.

**APPENDIX A**  
**VISUAL SITE INSPECTION SUMMARY AND PHOTOGRAPHS**  
(Nine Pages)

## VISUAL SITE INSPECTION SUMMARY

Flint Ink Corporation (Flint)  
2601 Gardner Road  
Broadview, Illinois 60154  
ILD 006 537 245  
report to:  
33105 Schoolcraft Road  
Livonia, Michigan 48150

Date: December 15, 1993

Primary Facility Representative: Robert Farej, Gravure Production Manager,  
Broadview, Illinois

Representative Telephone No.: (708) 865-8300

Additional Facility Representatives: Elizabeth Boyer, Environmental Supervisor,  
Livonia, Michigan  
Lisa Strbik, Livonia, Michigan

Inspection Team: Celeste Brancel, PRC Environmental Management, Inc.(PRC)  
John Maher, PRC

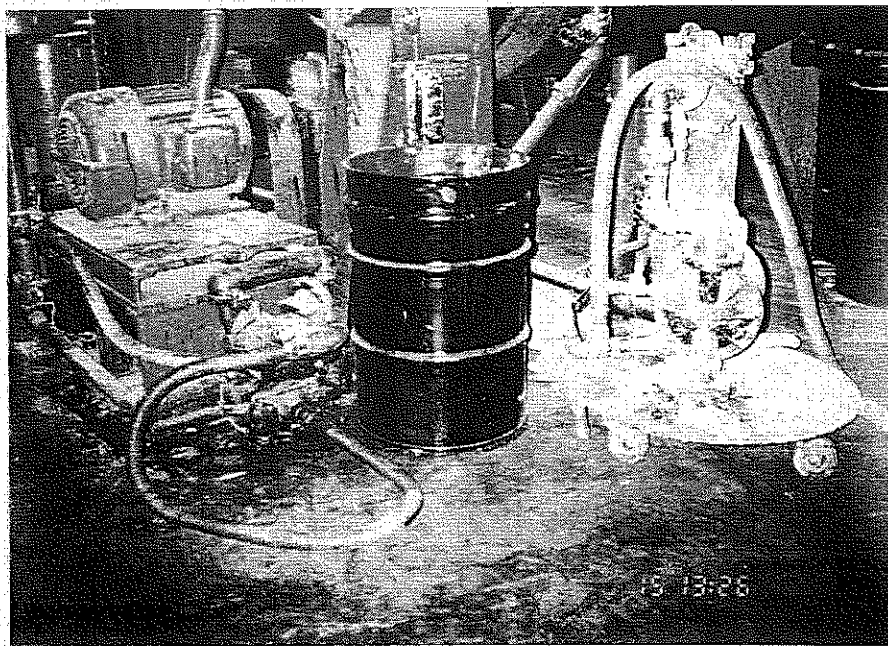
Photographer: Celeste Brancel

Weather Conditions: Partly cloudy, partly rainy, about 40 °F

Summary of Activities: The visual site inspection (VSI) began at about 9:00 a.m. with an introductory meeting. The inspection team explained the purpose of the VSI and the agenda for the visit. Facility representatives then discussed the facility's past and current operations, solid wastes generated, and release history. Facility representatives provided the inspection team with copies of requested documents.

The VSI tour began at 12:15 p.m. The tour included the following areas: the Satellite Accumulation Areas 1 (SAAs 1) (SWMU 1), Systech Tote (SWMU 2), Former Drum Storage Area (DSA) (SWMU 3), Pan Washer (SWMU 4), site of the Former Caustic Aboveground Storage Tank (AST) (SWMU 5), SAAs 2 (SWMU 6), Dumpster (SWMU 7), portions of the Pump and Treat (PT) System (part of SWMU 9), and Empty Drum Storage Trailer (SWMU 8), and sites of the Former Southeast Underground Storage Tank (UST) Release Area (AOC 1), and Former Southwest UST Release Area (AOC 2).

The tour concluded at 2:00 p.m., after which the inspection team held an exit meeting with facility representatives. The VSI was completed and the inspection team left the facility at 2:15 p.m.



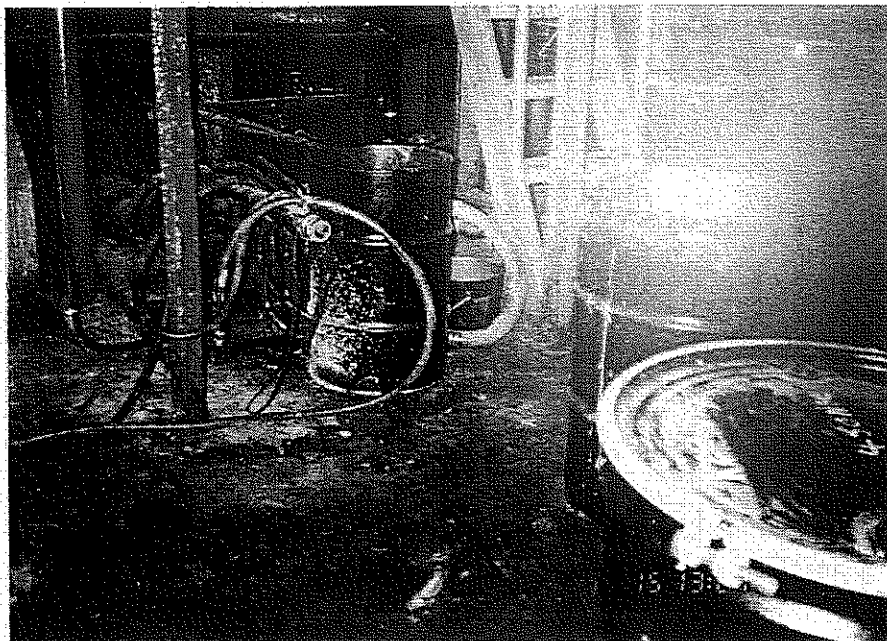
Photograph No. 1

Location: SWMU 1

Orientation: Northwest

Date: December 15, 1993

Description: This photograph shows one of the SAAs 1 used for collecting scrap waste ink and solvent from the floor.



Photograph No. 2

Location: SWMU 1

Orientation: West northwest

Date: December 15, 1993

Description: This photograph shows one of the SAAs 1 used for collecting line rinse waste ink and solvent.



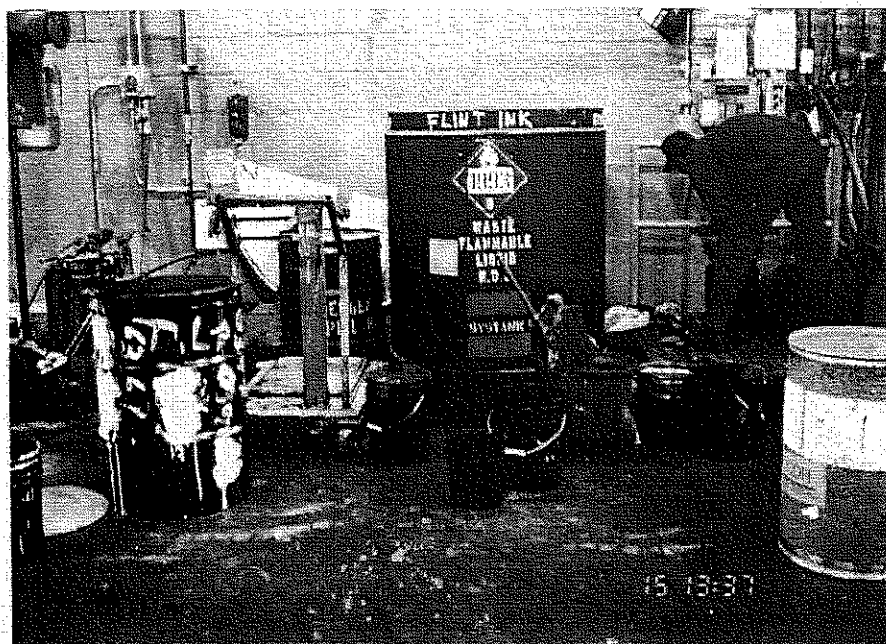
Photograph No. 3

Orientation: North

Location: SWMU 1

Date: December 15, 1993

Description: This photograph shows one of the SAAs used to collect laboratory waste ink and solvent. Minor stain are visible on the carton below the pail and on the rubber floor mat.



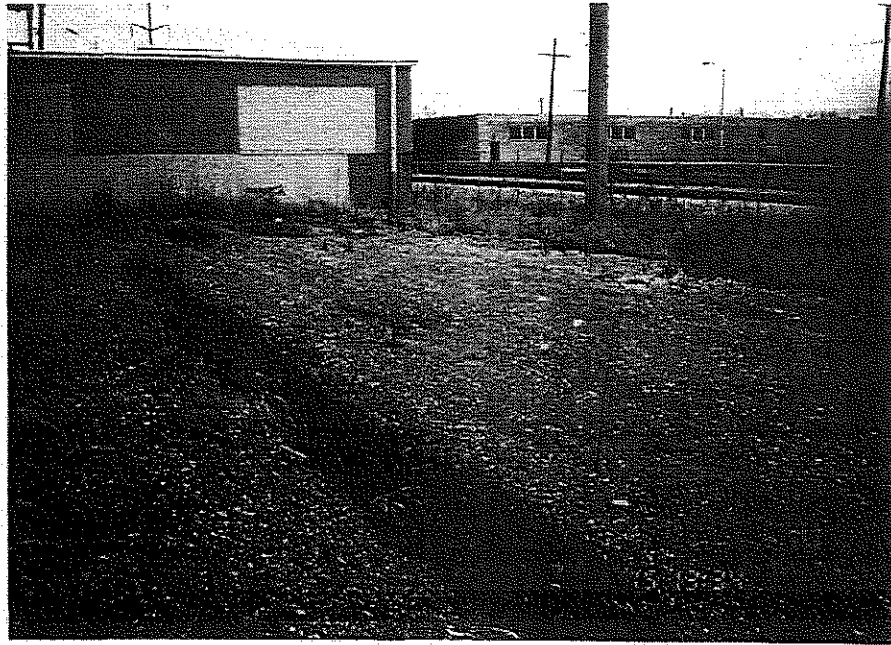
Photograph No. 4

Orientation: South

Location: SWMU 2

Date: December 15, 1993

Description: This photograph shows the Systech Tote.



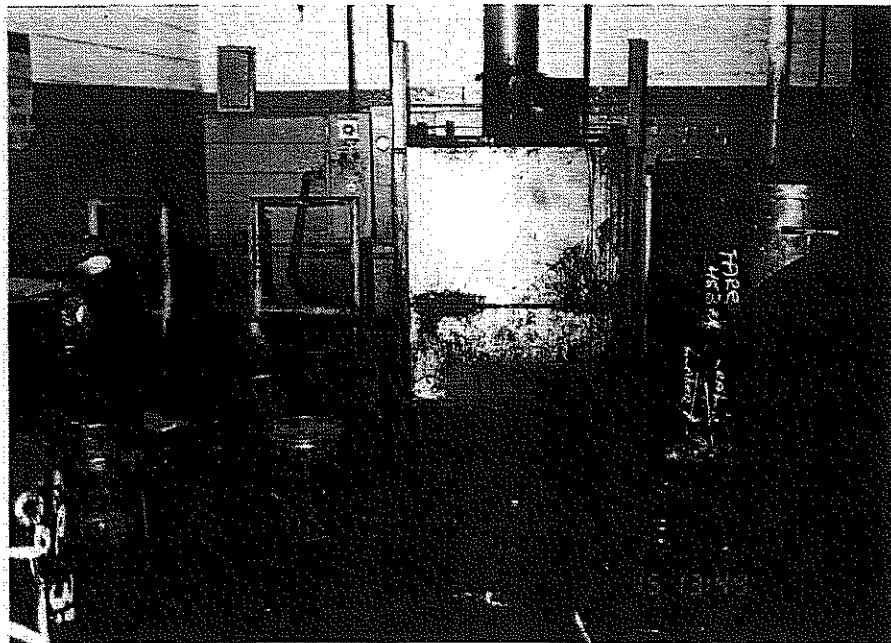
Photograph No. 5

Orientation: Northeast

Location: SWMU 3 and AOC 1

Date: December 15, 1993

Description: This photograph shows the Former DSA and the site of the Former Southeast UST Release Area. The ditch of ponding appeared to be from the day's rain.



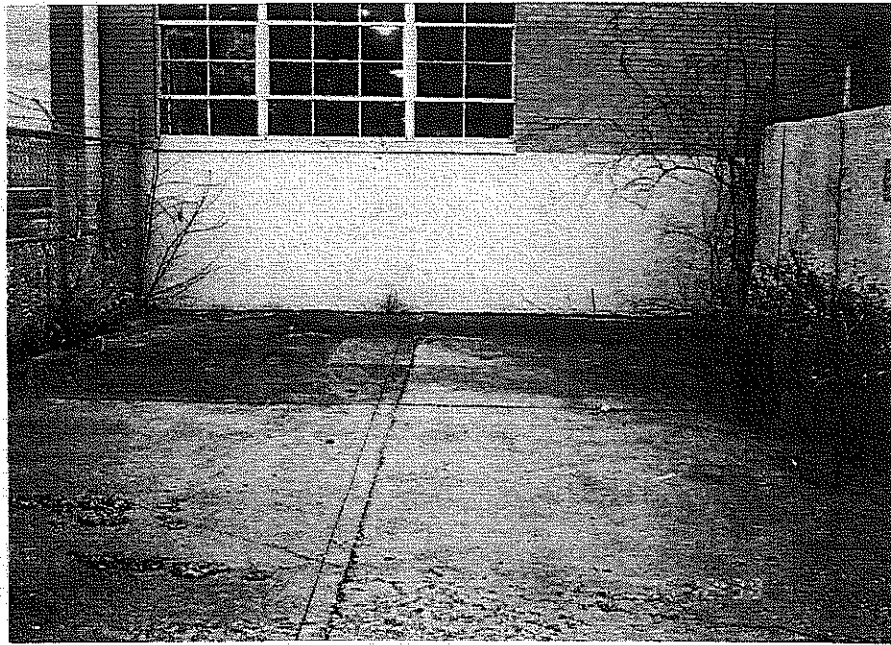
Photograph No. 6

Orientation: North

Location: SWMU 4

Date: December 15, 1993

Description: This photograph shows the upper view of the Pan Washer along with drums and a pail set aside to be washed.



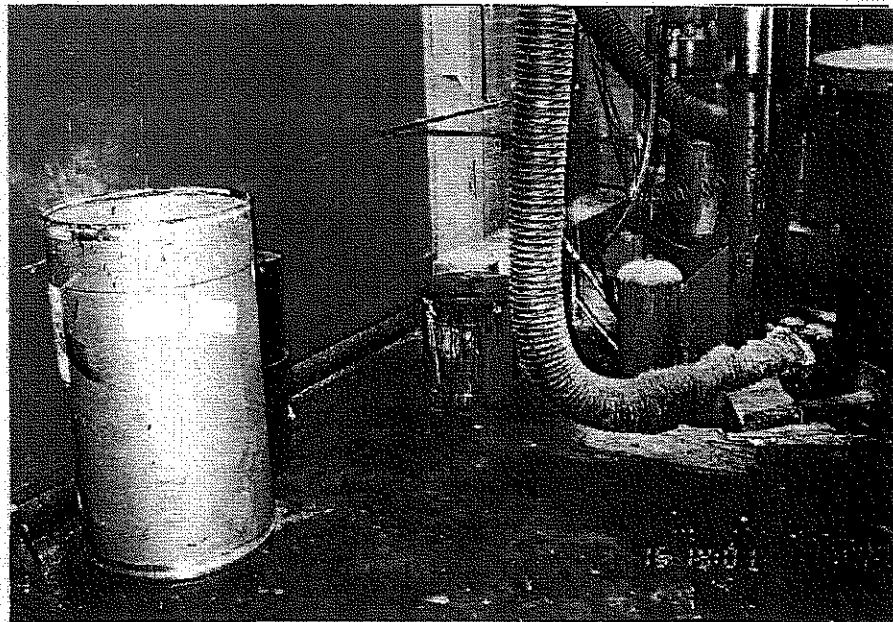
Photograph No. 7

Orientation: South

Description: This photograph shows the site of the Former Caustic AST.

Location: SWMU 5

Date: December 15, 1993



Photograph No. 8

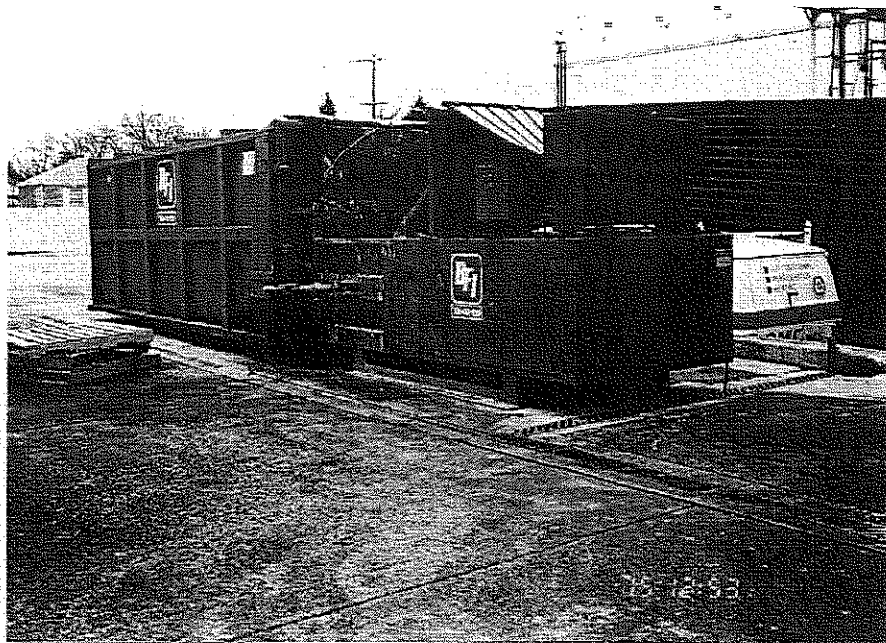
Orientation: Northeast

Description: This photograph shows one of the SAAs 2 in the center and a general refuse 55-gallon cardboard drum along the left side.

Location: SWMU 6

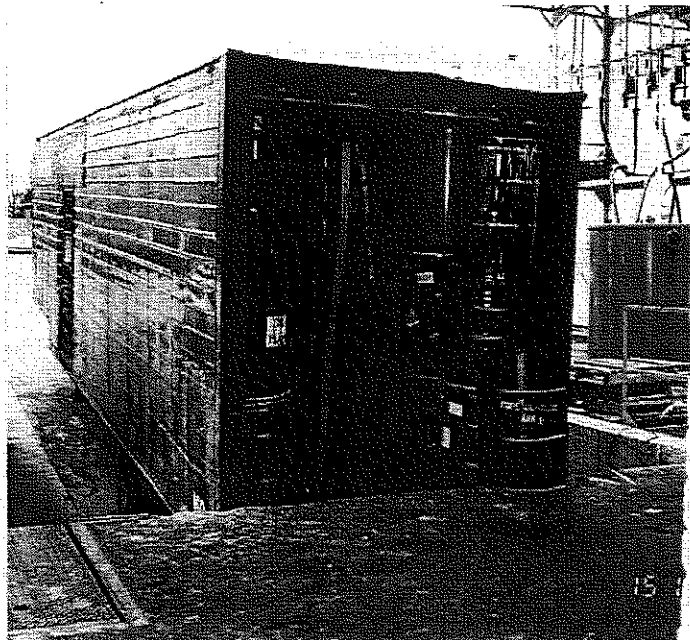
Date: December 15, 1993





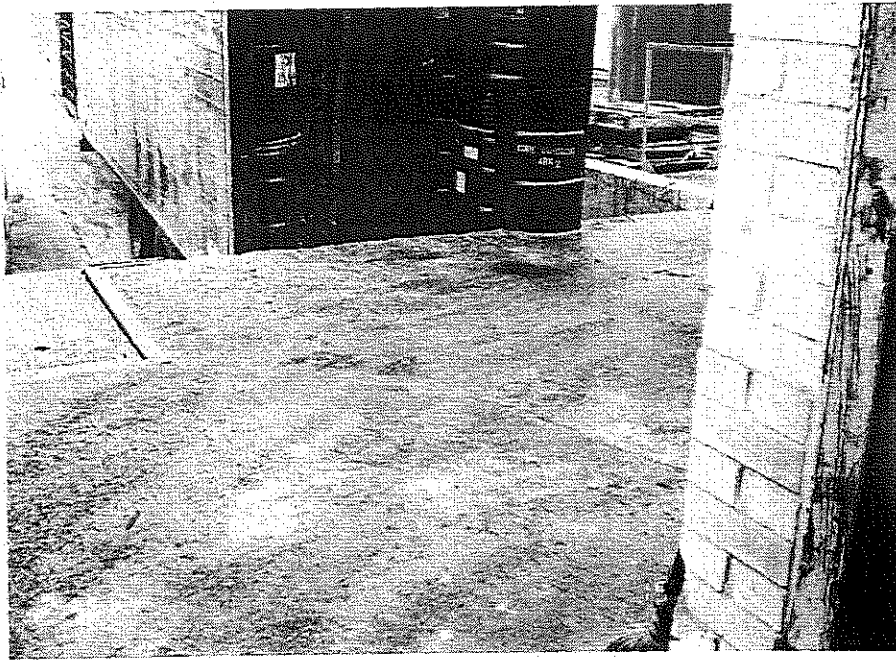
Photograph No. 9  
 Orientation: Northwest  
 Description: This photograph shows the Dumpster.

Location: SWMU 7  
 Date: December 15, 1993



Photograph No. 10  
 Orientation: West  
 Description: This photograph shows the Empty Drum Storage Trailer.

Location: SWMU 8  
 Date: December 15, 1993



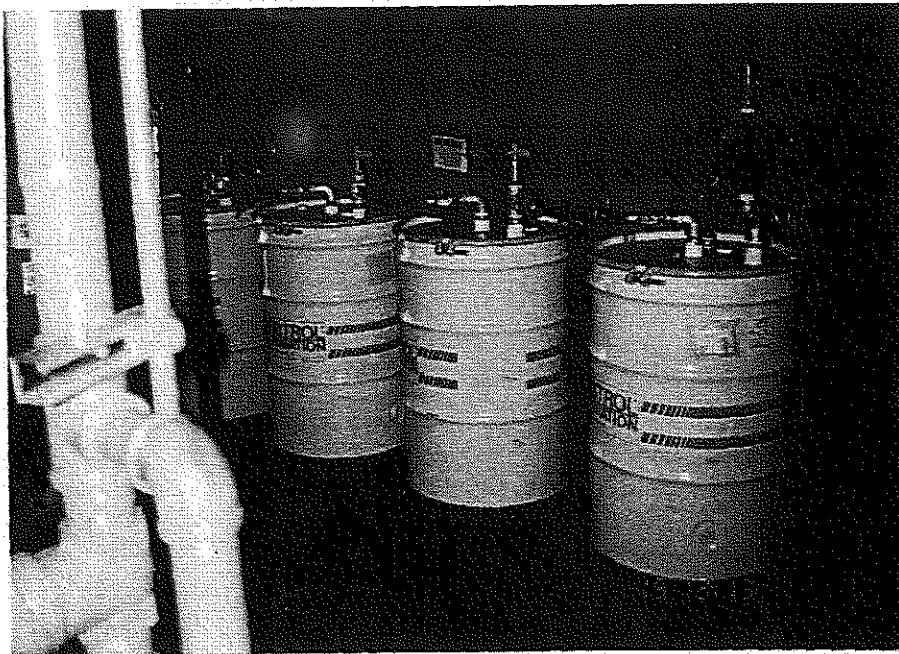
Photograph No. 11

Orientation: West

Description: This photograph shows the asphalt surface of the dock in front of the trailer, including moderate stains and minor cracks.

Location: SWMU 8

Date: December 15, 1993



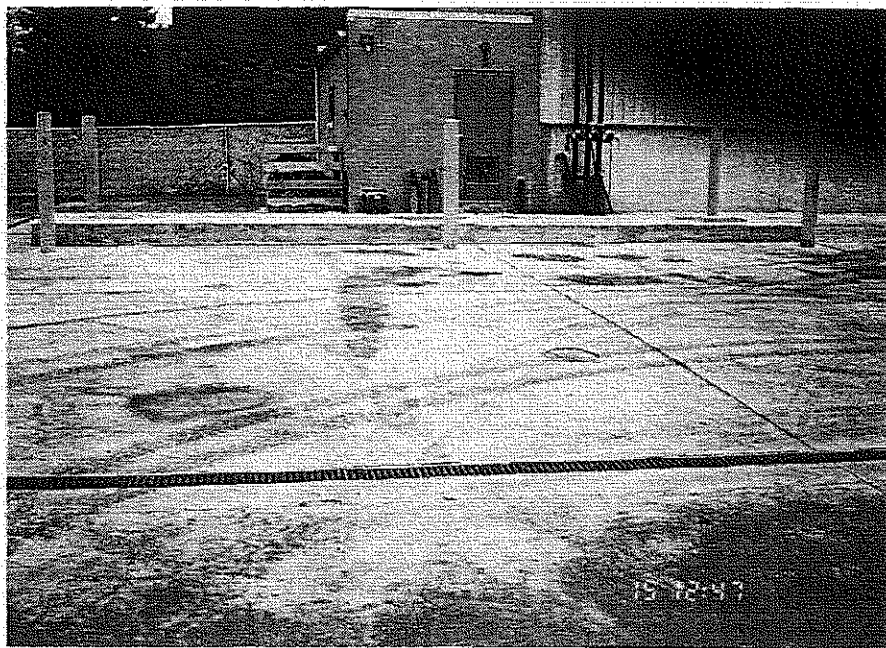
Photograph No. 12

Orientation: Southwest

Description: This photograph shows a portion of the PT and SVE Systems; the canisters shown hold the activated carbon that will be used to filter contaminated groundwater.

Location: SWMU 9

Date: December 15, 1993



Photograph No. 13

Location: AOC 2

Orientation: North

Date: December 15, 1993

Description: This photograph shows the site of the Former Southwest UST Release Area. Puddles appeared to be from the day's rain.

**APPENDIX B**  
**VISUAL SITE INSPECTION FIELD NOTES**  
(16 Pages)

91  
12-15-93 95

90

Flintkirk Corp.

Broadview, IL

Partly cloudy ~40°F

Lisa Stabik

Beth Boyer

Robert Faraj

John Maher

Celeste Brunel

- 3000 ft<sup>2</sup>

~ 45,000 ft<sup>2</sup> - 9,000 office  
lab & control office (production)

- Began 1953 - construction

expand → 1965, 1971, 1974

general office,  
mfg. area  
tank farm

- and upgrades of tanks

< 30 yr old  
4-10,000 1-15,000

2 25,000  
2 712,485 old 5 (1975 old)  
20/12/15/94

(92)

Family moved at  
Livonia, Mi.

2511 Glenhurst Ave  
Royalton, ME

482239

313-538-6800

- vacant property prior  
to construction - one  
of 2<sup>nd</sup> - in industrial park

employees 45 - 5 days  
2 shifts -

- no water  
- 3 dust collectors  
- 1 pump & treat system  
APPS running

OK 12/15/93

(93)

- has 12 mill lbs - of ink  
for RR. Donnelly (son's college)  
- added new business

- currently produce 3 M lbs  
of ink - <sup>only</sup>  
- distributed 5/10/93  
- (rubber fabricated  
material treated to  
a strong ink and repell  
water) -

Buy raw materials from  
foreign domestic  
pigments, resins, & release  
material (H<sub>2</sub>O, solvent, acetone  
ink oils.) Modified w/  
oils, waxes, plastic  
for adhesives. 12/15/93

(94)

total liquids stay  
to rats (5 gal to  
1000 gal) - 5 ton  
are provision to dispense  
pigment then will to  
further dispense, then  
after and evening-

- Raw materials stored in  
55 gal drums, bags,  
450 storage of toluene,  
balance of solvents in  
drum or 300 gallon tobe  
bins. - All storage indoors  
Over 55 gallon drum of  
residue is stored outside.

Chenault  
12/15/93

(95)

After evening materials  
are shipped out on  
used in house

AST - 16 ~~gal~~ in new tank  
from 4 10,000-gal  
12 6,000-

old tank from 7 AST  
7 ~~gal~~ 4,500.

3 in new tank from are  
the only ones that have  
product (1 10,000-  
5/cent - resin product, 2-  
1 10,000 & 1 4,000  
2/15/93 - vanish - natural  
residue - 500 lb.

Chenault  
12/15/93

(96)

- All dry materials captured by cyclone and recycled back into ball mills to make for black ink.
- liquid materials was recycled back into process - weighed manually and added <sup>air to concentrate</sup> or poured on paper into pop pipe feed lines and into tote bins.
- also use small containers for transfer.

- liquid spills are acetates → alcohols - accumulated in sytee tote. 350 gallon

ORCA 12/1/79

(97)

- closed unit

- empty solvent dums are returned to vendor.
- tote bins returned to Chem Centrat for refill.
- Mill wash - solvents used to wipe down rollers, blades, shafts etc.
- Some ink then filters - use cartridge or filter bag - changed based on pressure level
- both process per 2000 gallon batch
- small process change per 1000 gallon
- smaller process use cheese-cloth on a roller but manually changed

12/15/93



(98)

- by pouring over and  
cup point over where both  
the filter skin

- Manually removed, rolled  
up & put in 5 gallon  
pail in 55-gal drum to  
air dry in mixing rm.

Dry filter put into  
compressor - general refuse  
w/ paper, skid, office  
waste.

- some empty drum are  
(sent out for reconditioning  
(varnish, flushing etc.)  
and purchased back and  
product is put in them  
for sale. CBW, 12/15/93

(99)

Drum recondition  
Acme Band  
Chicago, IL

2/3 of materials recycled  
back into process  
1/3 is put in systecode  
tanks - (satches weighed  
in error, contaminant  
batches, fineness joint,  
steel, bad batches.) -

QC - solvent wash of  
glass bottles on filter  
screens, paper cups  
& glass bottle sampling  
materials - collected  
in a 3.5 gallon bucket  
- full buckets put in systec.  
- one systec - CBW, 12/15/93

(100)

- paper cups to dumpster
- eventually to landfill.

Waste ink - some from customer complaints

Pan-wash water - comprised of 75% water as low pH trigger to remove alkylates from sintering tube.

output  
oil-based, solvent-based  
is  $H_2O$ -based is  $K_2S$   
soybean oil-based is  $K_2S$

oil-based generator  
pan wash

Observed  
12/15/23

(101)

solvent,  $H_2O$ , soy generator  
system to the stream.

Pan wash water sent  
to Chem Dept - disposal treatment  
collect in settling tank - started  
very cloudy - water  
pumped from settling tank  
to off-site transporter

1800 gal - can be steel

Mr Frank's transporter

- high pH - Chem Dept  
used, to treat sludge  
waste - D002, D003, D005,  
D007, D030,

- transport off site every

9 months - not a waste  
until transporter comes  
to soak sludge  
Observed 12/15/23

(102)

System  
330-801A - carbon steel  
transporter removes  
to be replaced w/ new one  
→ Van, Walters & Rogers  
#200008 19938 S. Hawthorne  
IL  
disposed to Systech Corp.  
Greencastle, IN  
IND 006 442212  
DOOL, F002, 3, 5, 2018  
monthly shipments

Operations changed  
in 1991 - from bulk mostly  
to small batch  
type  
#60  
Shaw  
12/15/93

(103)

12M  
1991 ① Greiner - bulk  
Aromatic hydrocarbon  
solvent base  
20112  
② Pollution - Design  
spy-type, petro-based  
alkyd resins  
1992  
1700 gal to  
Clean Harbor - special  
wastes from steam cleaned  
H<sub>2</sub>O from UST removals  
1993 estimate  
300-600 gallon/mo System.  
26-3000 gal/annually for brush  
Removed 7 total USTs  
1990-92 period  
2-75,000 gal - LUSTS - to be  
recycled solvent  
-95-95 to be  
offered  
12/15/93

(104)

- reclaimed solvent from Benselley
- Benselley recovered 95-6% solvent. Flint purchased back solvent from Benselley
- Currently installing pig and tank system into first one now.

7 tanks removed  
5 tanks  
2 least tank removed with bottom.  
25,000 = textile spirits  
#1 15,000 reclaimed solvent  
#2 toluene  
#3 waste VMP  
#4 textile spirits  
#5 ~~textile spirit~~ ~~hydrocarbon~~  
#6 toluene  
#7 toluene on oil drum  
reclaiming ~~OB~~ 2/15/93

(105)

- 1992- purchased total containment system 3 tank system but took \$1000 to get in 50' pulled and sent back to tank seller to recondition and add cathodic protection and 2 at
- one of 3 has product toluene - 15,000 other 2 tanks empty due to product slow down

~~OB~~ 2/15/93

(100)

1976 - release from  
being treated by pump  
& treat system -

1987 - overfill - area tested  
- see closure report  
- should be fully cleaned  
up - EPA 135000 letter.

no other air per

- 3/4 filter and bag house  
all collect pigment dust

sol vapor extract &  
active carbon filter  
not that good.  
O'Brien 12/15/93

(107)

- currently writing work  
plan for - SW - will  
sub mit to EPA in  
2 wks

- < today generation  
log quantity

- Bldg - fire and burglar  
alarm, fenced on east  
south & west. - to bldg.  
Rail has access to fence  
- gates

(no longer receive rail bulk  
but shipment since Donnelly -

- Broadview has no ASP  
ordinance.

O'Brien 12/15/93

(108)

No other known releases

\* Pan-wash currently  
under going analysis

1993 - Pan - Holding tank

1986 - 1991 Hold tank

197? - 1985 - closed ACRB  
caustic tank

known Panion to 1980  
possibly 1970s - 1985

- originally had Chicago Fair  
sinks -

- Bonnelly - 1966 - no waste  
all waste reclaimed

start

1993 - Baghouses

1987 5/4 dust

- prior - had similar

smaller unit since 1965

- Panion to 1965 slightly  
observed 17/15/93

(109)

have an

- Baghouses newly added  
in 1993

- Between 1953-65  
not known how a if  
emissions were handled

- Empty drums & totes  
deposited <sup>between</sup> 1970-72, prior used  
bulk after 1970-72

1993 compacter & dumpster  
BFI -

prior had a walloff box  
from Hillside (10-12 years)  
Hillside Disposal Co.

Congress Development handoff  
Hillside, & <sup>to Bonnelly</sup>

12/15/93

(110)

Filter cotton drums  
at least @ 1975  
prior - unknown

QC bucket  
1975 prior unknown

System notes

1993 -

→ ~~papers~~ re worked to black.

1975 - 1985 - drums

at OSA

1985 - 1993 -

prior to '75 unknown.

Most heavy metals seen  
pre 1980's - also to new  
packaging requirements  
especially east coast  
@ Borden 7/15/93

(111)

✓ baghouses

✓ dust collector

✓ system tank

✓ empty drums - no condition

✓ empty tubes @

filter drying pairs

✓ compactors

QC SAA

✓ PWS-wash holding tank

✓ pump & treat system  
- area in question

✓ - OST areas.

VIT 1.3.15

✓ on ch. 11'5" - 12'5"

✓ 11'5" & concrete panel

#1 50' in

✓ R614 acoustic wash tank

✓ non-water cracked mirror

✓ fence now removed

✓ dump from new @ 12/15/93

(112)

W - vegetation  
- Pungent  
by draw like jack mfa-

W - residential across  
(roadway)

Co W flows north

#2 2 tank / 3 tank area  
N - environmental  
removed

black ground about 210g  
is pump & tank housing  
- (legally installed)

OB removed  
12/15/97

(113)

- grinding shot  
- grind pigment to  
disposal size

#3 BFI compactor  
and dumpster  
NW

draws in trenches in south  
lot drain to dock area  
then to storm sewer  
via a sump pump -

#4<sup>25</sup> W Acme barrel tank  
empty drums going to  
Acme for reconditioning  
materials - asphalt mixer  
cracks -

OB removed  
12/15/97



(114)

with neighbor - Elans  
flour mfg

- filters - clay, talc

- covers mixers

1st mixing for small

- pan wash - uses rags to  
clean tubs

- then QC - adjusted then  
it needed to  
rollar mill to get fine  
bubbles out.

XRAY -

~~Shaw~~  
12/15/93

(115)

bulk feed - material in  
dry is hand feed

varnish is a media to  
spread - AGUGOS media

#6 SW - dry, activated  
carbon -

- part of pump & tank  
system - concrete  
floor - activated  
cracks -

one pipe replace  
spent shot -

spent shot cleaned &  
sent to dumpster -

sent 1 tank 54500  
product Channing  
12/15/93

(116)

line airtight to  
pump lines and  
floor scraping with  
be ~~to~~ soluble adjusted  
and added to systech  
tank -  
#7 WNW floor scrap -  
minor stains concealed

#8 WNW line airtight

minor stains, cracks  
- not an SAA - still used -

#9 N 1/4 dust collector  
(double collector -)

no cracks - covered floor  
closed funnel connector -

C Brown  
12/15/93

(117)

N#10 S tank dam  
near - concrete?  
tanks, removal  
and spill area from  
tank #2  
now just gravel  
spun covered by weeds  
no longer used  
- soil testing indicated  
no contamination tanks;  
just from spill -

#11 S - systech tote  
concrete floor  
moderate stains  
no cracks  
included E002 - as sticker  
shouldn't be -

C Brown  
12/15/93

(13)

#12 SF Bag house

concrete floor so  
stains or cracks -

collect in 20-25 gallon  
containers -

#13 PAW wash

N Steam coil heated

uses water & low pH  
solvent works like

dish washer

draws into bottom of  
unit moderate temps  
some gauding

- settled sledge in tank

#14 N

S

floor observed by  
tubs waiting for washing

observed  
12/15/93

(12)

sledge in settling  
tank will be emptied  
in to tub and wheeled  
to dock so that  
tanker can suck out  
sledge.

no filter clothes to  
photo - none currently  
drying

#15 NE

AA g ear

- 200-400  
bags/week

collected and loaded

Pair textile toilet T-2  
- wash site

#16 N

PC wash residue

linenwood floor - rubber floor

minon skins in

End pic 2 pm  
Observed 12/15/93

(120)

SE area was SSA  
prior to closure -

leave facility 215

possibly  
conducted prior to facility

~~Chad Jones 12/15/93~~